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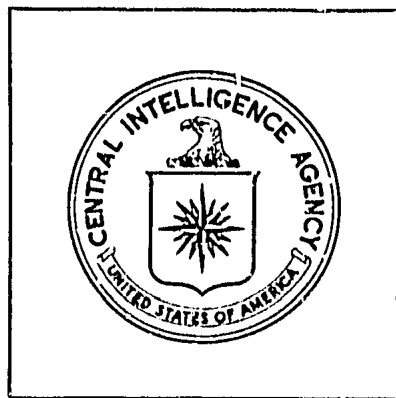
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Food and Population Problems Threaten Indonesia's Future

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Food and Population Problems Threaten Indonesia's Future

Indonesia faces serious and growing problems caused by a rapidly increasing population (estimated at 140,000,000 in 1975) pressing against limited agricultural resources. Despite continued economic growth and an 80 percent increase in rice production, per capita food production has stagnated during the past decade. Government programs designed to ameliorate these problems have in themselves helped to create other social and political stresses and pressures. The overall problems confronting Indonesia's leaders are:

- ... Population growth that adds more than 3 million people annually and a realization that a significant slowing of the population growth rate is unlikely during the next decade
- ... Increased rice production gains of the past decade appear unlikely to be maintained during the next decade
- ... Introduction of Green Revolution technology while contributing to increased rice production is creating undesirable social effects
- ... A deterioration of Java's physical environment caused by increased population pressures and expansion of the cultivated acreage that have intensified environmental threats (erosion and flooding) to present agricultural areas.

NCTE: This study was prepared by the Office of Geographic and Cartographic Research of the Central Intelligence Agency. Although the subject matter was discussed with representatives of other offices, including the Office of Economic Research, AID, the Department of State, USDA, and U.S. Mission personnel in Indonesia, no attempt to reach a formal, coordinated position has been undertaken. The views presented represent the best judgments of the issuing office which is aware that the complex issues discussed lend themselves to other interpretations. For further information about this paper, please call [REDACTED] Code 143 Extension 3057.

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Population Problems -- Indonesia's population continues to increase by about 3.2 million people per year -- a total more than double the current yearly growth in the United States -- and this growth rate is not likely to abate during the next decade. Population pressures are particularly severe on the islands of Java (including Madura) and Bali where nearly two-thirds of Indonesia's population is crammed onto only one-fifteenth of the land area. Rural densities here are among the world's highest. The Javanese countryside is rapidly changing as villages sprawl for miles along major roads and cities expand and engulf additional amounts of precious agricultural land. The displaced farmers and landless rural laborers, seeking an improved standard of living, are going to the cities, causing urban populations to swell at an explosive clip. Jakarta, for instance, with a population exceeding 5.2 million, is growing at an annual rate of nearly 6 percent.

The specter of poverty and malnutrition accompanies this growing mass of people. Although masked by a per capita income of 125 dollars per year, reports show that about 57 percent of the rural population subsists on less than 30 dollars a year and 75 percent of the income of the average Indonesian is spent on food.

The principal governmental approaches to slowing the rate of population increase and relieving the population pressures on Java and Bali have been through the initiation of a family planning program and through transmigration (the transfer of Javanese and Balinese to the outer islands). President Suharto's 1967 appointment of a Minister for the People's Welfare and establishment of a National Family Planning Coordinating Board marked a major innovation in government policy and represented a sharp break with the pro-natalist attitudes that prevailed during the Sukarno era (1950-1966). Since then the family planning budget has been expanded and assistance from foreign aid has increased. While this vigorous program has permitted a network of clinics, doctors, field workers, and support services to develop, a host of administrative, logistical, cultural, and social hurdles still must be overcome to produce a significantly lower birth rate. In addition, motivation to shrink family size still appears to be inadequate despite the lack of jobs and a reduction in infant and child mortality rates. Should the optimistic family planning goals (12,000,000 new recruits from Java and Bali during the Second Five-Year Plan, 1974-79) be realized, the effect will be a minor one in slowing the island's growth rate in the near term.

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Transmigration, Indonesia's traditional approach to relieving population pressure on Java, has been reemphasized under the Suharto regime. In the past, transmigration has been hindered by inadequate preparation of settlement areas as well as by reluctance of the Javanese and Balinese to leave their homes. These problems plus high transportation and site preparation costs will continue to hamper a revitalized transmigration program despite the increased budgetary allocations and greater publicity and incentives. Even if the government goal to move 250,000 heads of families during the Second Five-Year Plan is reached, its realization will have only a negligible effect in slowing the growth rates of Java and Bali. Perhaps more effective results will come from Jakarta's successful development of the outer islands so that large numbers of people will be encouraged to voluntarily leave the core islands.

Agricultural Production Problems -- Indonesian authorities have long grappled with the problem of increasing rice production sufficient to meet the demands of their people. Since Indonesians judge their governments by their ability to provide adequate amounts of rice at low costs, it was not surprising when the Suharto regime, following the disastrous Sukarno years which saw food output decline, sought to achieve rice self-sufficiency as the cornerstone for future political and economic stability. Since 1969 government programs have been of a "quick fix" variety designed to increase rice production through the introduction of Green Revolution technology (high-yielding seed varieties, fertilizer, pesticides) in Java -- the ricebowl of Indonesia but a major deficit area by virtue of its overpopulation.

The success of the Green Revolution in Java is debatable; but use of high-yielding seed varieties and increased amounts of fertilizer have been contributing factors to greater total production and higher yields per hectare, and marked increases in rice production have been recorded. Equally important has been an expansion in the harvested area brought about by rehabilitation of irrigation works and the transfer of land to rice from other agricultural uses.

Jakarta's goal to achieve self-sufficiency in rice production on Java, however, has not been realized. The island's ever-increasing population coupled with government inefficiencies, passive resistance to aspects of the program by some farmers, and the inability of local governments to handle administrative and financial aspects have been largely responsible. Farmers saw the program as an imposition and alteration of traditional methods, and local government staffs deficient in trained persons

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and technical know-how could not carry out the plan. Also, in many instances logistical problems, have hindered timely delivery of the agricultural inputs.

According to an extensive survey conducted recently in Indonesia, rice production during the next 5 years is unlikely to match the 5 percent per year increase achieved since 1969. The major gains resulting from irrigation rehabilitation and the introduction of new seed varieties may have reached their limit, and rice production on Java may begin to level off. Experts state that for Jakarta to reach its goal of a 4.4 percent annual increase in rice production during the next 5 years, a remarkable yield increase would have to be sustained, but this should not be counted on. On the other hand, if government measures to increase output in the outer islands prove successful, the prospects will be brighter.

For the longer term Jakarta is looking to its vast outer islands -- particularly Sumatra, Kalimantan, and Sulawesi -- for major increases in food production. This prospect, however, is complicated by problems of poor soil, inadequate drainage, lack of transportation, and complex landholding laws in these islands. In 1974 the Indonesian Government invited private investors to open rice estates in the outer islands where preliminary surveys indicate possible success. The only qualification to development is that the estates be highly mechanized and located in areas of low population concentration. The estates, to employ capital intensive production methods such as aircraft seeding, large amounts of fertilizer, and sophisticated irrigation techniques, will be extremely costly to develop, and the production gains are by no means assured. One estate is now being developed by a U.S. firm and two others are in the survey and planning stage.

To complement these rice estates, Jakarta hopes to bring into cultivation some 1 million hectares of tidal swamps during the Second Five-Year Plan (1974-79). This project revives a previously unsuccessful Dutch idea to employ the tide as part of the irrigation process; success depends in part on developing rice strains suited to the brackish environment of these areas. Overall, the development plan for the outer islands is marked by a "catch up" philosophy seeking to bring large tracts of land into production within a minimum time frame, and is not a program that carefully balances the environmental, cultural, and political factors designed to gradually increase food production and improve rural welfare.

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Social Side Effects -- Changes brought about by the modernization of agricultural technology have introduced social problems in some areas that threaten the traditional fabric of rural Indonesian society.

The modernization of agriculture has been oriented towards landlords and well-off farmers possessing more than the average amount of farmland. These farmers have been able to take advantage of government subsidies, introduce the needed technological changes on their farms, and increase their yields and profits.

In contrast, many of the poor farmers frequently cannot qualify for the limited credit available from the government. Furthermore, even those who can qualify feel the uncertainties of new techniques are too risky. Consequently, the poor subsistence farmer is likely to grow the proven traditional seed varieties. The upshot is that the rich farmers get richer by realizing gains from improved technology while the poor subsistence farmer and landless laborer remains non-competitive and unable to benefit from the Green Revolution.

Commercialization of agriculture and the introduction of a money economy into traditional Javanese society have created additional problems. Conventional agricultural practices on Java permitted landless peasants to harvest the rice crop in exchange for payment in kind. Although this system was workable in the past, continued rural population growth is forcing more and more peasants to depend on this form of wage labor to meet their food needs. As the number of itinerant laborers has begun to climb and because improved rice varieties cannot be harvested by traditional methods, the larger landowners have begun to reevaluate traditional harvesting practices. In some areas they have begun to contract harvests to small groups of professional harvesters. This practice has maximized profits but has had devastating affects on employment.

Environmental Constraints -- Java's physical environment is deteriorating as population growth places even heavier demands on its limited resources of water and soil. Forested watersheds have been stripped by extensive logging and the ravages of increasing numbers of peasants seeking wood for fuel and land to farm. The removal of the forests has opened these areas to heavy tropical rains and increased markedly the incidence of erosion and flooding. Deforestation has indirectly caused a decline in the water table in the mountains and a decrease in the dry season river flows. The decline in water supply will

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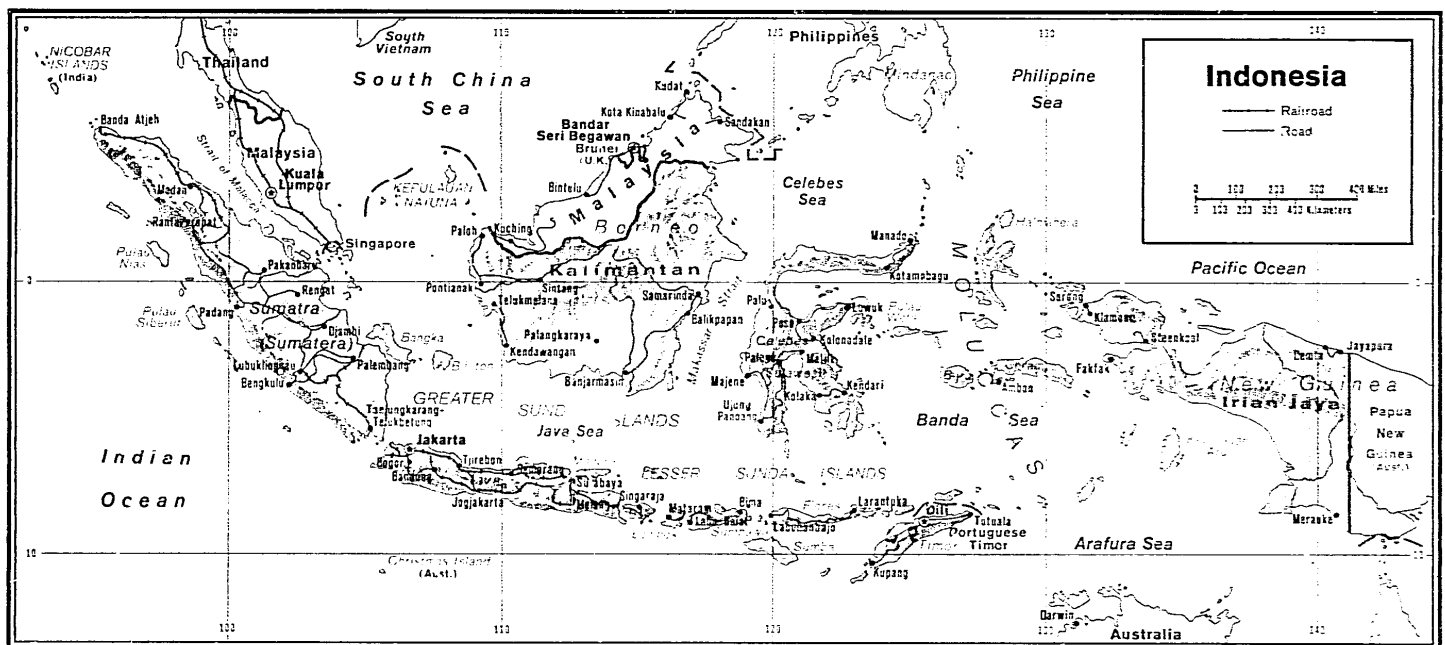
severely curtail increases in dry season rice production -- particularly increases from high-yield strains that do best in a dry season environment if given adequate irrigation.

Although Jakarta has attempted to increase the water supply through construction of reservoirs, few good dam sites are available and the island's high level of volcanic activity adds to construction and maintenance costs. In addition, new reservoirs will almost certainly take land out of cultivation and swell the ranks of Java's landless laborers.

Outlook -- Projections indicate that increases in rice production alone, over the next five years, will not be sufficient to allow Indonesia to meet its rising demands for food. Even if total rice production retains a slight edge over population growth, the problem of stagnating production of other crops must be compensated in order to alleviate nutritional imbalances. The lack of available agricultural land on Java means that large increases in food production required will have to come from the outer islands. Novel and costly development projects planned for the outer islands conceivably could ease demand, but their effect cannot be measured for several years.

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